Right for today,
ready for tomorrow

IBM Operating System/2 Extended Edition Version 1.2

ASCII Terminal Emulator - VT100
3270 Emulator - GW3 - C
3270 Emulator - GW4 - D
3270 Emulator - GW1 - A
PROFS MAIN MENU
Press one of the following PF keys.
PF1 Process schedules
PF2 Open the mail
PF3 Search for documents
PF4 Process notes and messages
PF5 Prepare documents
PF6 Process documents from other sources
PF7 Process the mail log
PF8 Process Displaywriter documents
PF10 Add an automatic reminder
PF11 Look at main menu number 2
PF9

OS/2 Communications Manager supports several different communications sessions concurrently.

Multitasking power for data and communications management is here today

Relational data base management, concurrent communications sessions, local area network support—they're all possible with IBM Operating System/2™ Extended Edition.

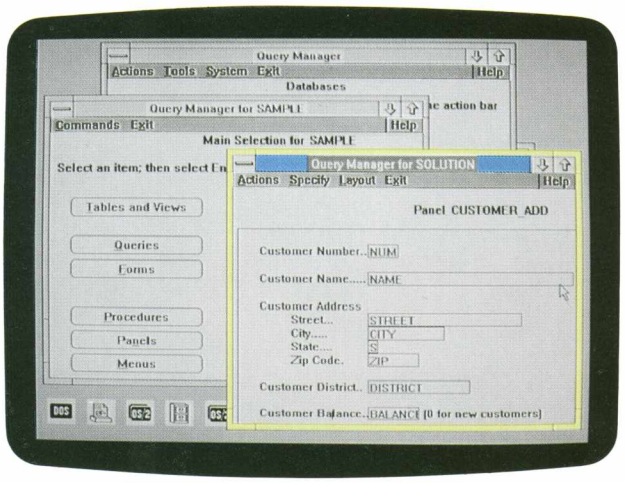
Designed to help you manage information with accuracy—and move it with ease—OS/2® Extended Edition 1.2 builds on the multitasking power and large memory addressability of OS/2 Standard Edition. So you can tap the full power of your 80286 and 80386 processors to handle even the most demanding applications.

For example, with Extended Edition's Communications Manager, you can maintain multiple communications sessions—even while you continue to run other applications. And with the Extended Edition's Database Manager, you get a full-feature relational data base that helps you maximize your information resources.

But you don't have to be an expert to take advantage of these powerful information management and movement tools. That's because both Database Manager and Communications Manager work with the OS/2 Presentation Manager.™ With Presentation Manager's graphical interface, you simply point and click with a mouse, and the Communications Manager and Database Manager menus appear on-screen.

Bring host and network resources within reach. With Extended Edition, you can access the documents and files of another system or mainframe located miles away. What's more, you can access many IBM System/370™ host applications right at your workstation and run advanced applications at the same time. That's because the Communications Manager integrates a wide variety of communications and network management capabilities—like the SNA LAN Gateway—in a single system. And it provides such basic OS/2 benefits as multitasking capability, large memory access, and enhanced ease of use.

What you gain from all this is the flexibility to keep pace with changing needs—and a path to higher productivity, too.



The Query Manager feature of OS/2 Database Manager simplifies SQL for non-expert users.

IBM

No longer do you have to wait for one communication session to end before starting another. With the Communications Manager, you can support several types of sessions at once—with each session in its own Presentation Manager window. And you can "talk" with other systems using a wide range of communications technologies and protocols, including: Synchronous Data Link Control, Distributed Function Terminal mode, Ethernet™ LAN, Advanced Program-to-Program Communications (APPC), IBM Token-Ring Networks (both 4Mbit-per-second and 16Mbit-per-second), IBM PC Networks, X.25 packet switching, and more.

For example, you can log on to a System/370 host using 3270 terminal emulation protocols, run a cooperative processing application in an APPC session with an AS/400,™ and receive a file transfer from another workstation—all at the same time.

These concurrent communications can now be run more easily than ever, thanks to Presentation Manager. Simply log on to each host through a Presentation Manager window—and switch back and forth between hosts according to your needs.

In addition to concurrent communications, Communications Manager offers other functions that enhance your capabilities and help work flow smoothly in your connected environment. These include file transfer, network and system management support, functions for gathering and processing problem-determination data, 3270 and Async terminal emulation and a 5250 Workstation Feature (WSF).

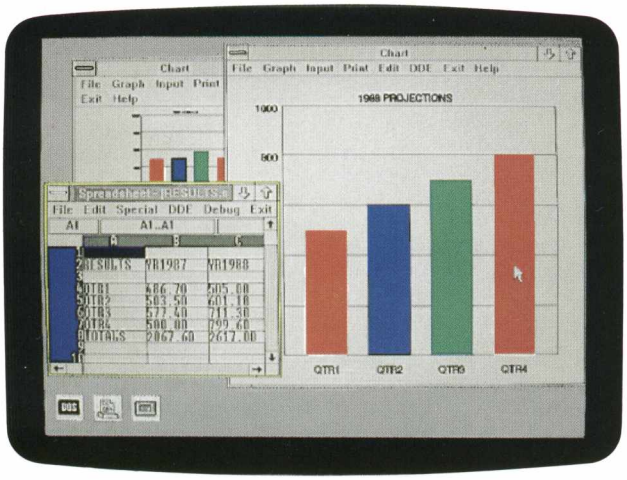
Extended Edition 1.2 also includes enhanced LAN Requester support. Designed to work with the IBM OS/2 LAN Server program, the LAN Requester allows each workstation running Extended Edition to access LAN resources with ease. So you don't need to install special LAN operating system software for each LAN user.

Build a comprehensive data base. When you use Extended Edition, you get another plus: support for a relational data base. Through Database Manager, you can work with or even create a relational data base that is consistent with other IBM relational data base software —DB2, SQL/DS, QMF and OS/400™ Database Manager.

Like this software, Database Manager operates under the IBM-developed Structured Query Language (SQL). If you're already familiar with this language, you can use SQL commands to query the data base. Or you can follow a prompted interface to create a data base, retrieve data and generate and customize reports.

The Database Manager can also import host data. And since it follows an architecture similar to that of IBM host data base products, Database Manager can be more closely integrated with IBM host data bases.

Thanks to its Remote Data Services feature, in fact, Database Manager allows multiple workstations to access a single OS/2 data base on a LAN. It can even access data bases residing on other workstations on the LAN—transparently. And because Database Manager now includes Referential Integrity, it validates changes to related data automatically.



OS/2 Presentation Manager allows you to display multiple applications concurrently—and move data among them.

There's more. The Query Manager component of the Database Manager allows you to create your own panels, menus and procedures. And, for the non-expert user, the Query Manager simplifies complicated tasks. You can also use the Database Manager's SQL programming interface and OS/2 programming languages to build a complete, interactive data base application.

Make the move to software and hardware consistency. Operating System/2 Extended Edition 1.2 implements elements of IBM's Systems Application Architecture™ (SAA) and SAA's Common User Access (CUA) feature. Designed to bring together IBM System/370, AS/400 and Personal System/2® environments, SAA provides consistent interfaces for communications and programming—even for end users. And the CUA feature furnishes common guidelines for developing easy-to-use OS/2 Presentation Manager applications.

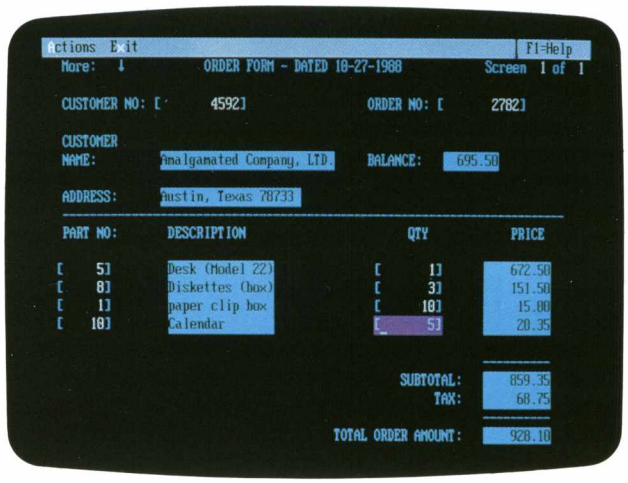
Have up to 16Mb of real memory available on demand. With OS/2's large memory addressability, you can handle many large, complex applications concurrently. And you can keep your most frequently used applications in memory at the same time. So if you're in the middle of creating a pie chart with a graphing program, for example, and need to quickly check a figure in the chart, you can query the data base that has the information. While you work with one application, other applications can continue to execute concurrently. And, whenever you like, you can easily switch among various applications and continue working.

View many windows at one time. When you're working with several programs, you don't have to stop and save one before retrieving another. With OS/2 Presentation Manager, you can create as many windows as you need, in any size, and view them concurrently—even transfer data among them.

Besides allowing applications to run in a windowing environment, Presentation Manager provides wide-ranging programming interfaces, ease-of-use facilities, a set of powerful graphics functions, and support for all-points-addressable displays, printers, pointing devices and plotters. So whether you're calling for a file or creating a complex application, the Presentation Manager streamlines your work by supporting and simplifying the way you interact with your system.

Keep working with DOS software. Because OS/2 Extended Edition 1.2 has a built-in DOS application environment, you can continue to run many of the PC programs you currently use. You can, for example, keep running the accounting or word processing programs used by the rest of the company.

Develop powerful applications for your specific needs. OS/2 Extended Edition incorporates a set of consistent programming interfaces to help increase productivity and simplify the process of writing new applications. Since the programming interfaces contain hundreds of functions, development time is sharply reduced.



With OS/2 Database Manager, you can customize your data base for a variety of specific applications, including order entry.

Programming interfaces provided with Extended Edition 1.2 include:

- High-level dialog interface
- Database Application Remote Interface—to help programmers develop applications that split processing between data base servers and requesters
- Query Manager Callable Interface—to allow other applications to use the interactive functions of Query Manager
- User control interface for Presentation Manager graphics
- Database Manager SQL Application Programming Interface—for high-level data definition and manipulation in data base applications
- Database Manager Precompiler Application Programming Interface—to facilitate the use of Database Manager by program language developers
- Advanced Program-to-Program Communications Programming Interface—for peer-to-peer interaction and communication with a variety of IBM systems
- Server-Requester Programming Interface (SRPI)—for communications-independent requester program calls to a server program
- Asynchronous Communications Device Interface (ACDI)—for exchange of data between applications over asynchronous communications links
- 3270 Emulator High Level Language Application Programming Interface (EHLLAPI)—for simplification of existing host applications via programmed operation functions
- IBM NETBIOS and IEEE 802.2 Data Link Control programming interface—for communicating across IBM LANs
- Video output interface—for simple text display
- Interprocess communication interface—for intertask synchronization and communication
- Memory and task management interfaces—for high-function, multitasking applications

Highlights

The following are several important features offered by IBM Operating System/2 Extended Edition 1.2.

SNA LAN Gateway enables a workstation to support host access for up to 254 link stations on the IBM Token-Ring and PC Networks.

Packet-switching support provides access to low-cost X.25 links to remote systems.

Ethernet LAN support provides connections to many widely used networks.

5250 Workstation Feature allows you to run up to five terminal or printer sessions with the AS/400 and System/36.

Clipboard capability is designed to make it easy to cut and paste data between multiple 3270 sessions and copy data from ASCII sessions.

3270 connectivity furnishes access to host graphics and directs printing to either S/370 or workstation printers.[1]

Emulator High Level Language Application Programming Interface simplifies complex tasks in workstation-to-host communications in 3270 and 5250 WSF environments.

Advanced Program-to-Program Communications support opens the door to distributed applications, so your workstation can team up with other IBM systems to tackle complex tasks.

IBM Operating System/2 at a glance

	Standard Edition 1.2	Extended Edition 1.2
Addressable memory	16Mb	16Mb
Multitasking	Concurrent processing; fast, easy switching among applications	
Enhanced file support	Files and partitions of 32Mb or more	
Presentation Manager	Built-in windowing, graphics and clipboard functions; common user interface	
Database Manager		Relational data base with query management, report generation and additional functions
Communications Manager		Support for a variety of multiple, concurrent communications sessions; LAN Requester support*
Ease-of-use facilities	Online tutorial, contextual help; on-screen messages	
Languages supported	IBM COBOL/2, FORTRAN/2, C/2, Macro Assembler/2, Pascal Compiler/2, BASIC Compiler/2	

**Supported by OS/2 LAN Server Program 1.0.*

ASCII terminal emulation permits your workstation to act as an IBM 3101 or DEC™/VT100 terminal and supports asynchronous file transfer.

Enhanced Connectivity Facilities provide a platform for cooperative processing in the 3270 environment.

Relational Database Structured Query Language support in Database Manager includes the powerful high-level data definition and manipulation language used in IBM host data base programs, such as DB2.

Remote Data Services allows workstation users to have access to data located in relational data bases on other workstations via IBM Token-Ring Networks, PC Networks or Ethernet LANs—as if the data base were local.

Database Services include storage access methods, SQL statement processing, transaction management, recovery services and concurrency control.

DOS Database Requester allows your DOS workstations to access information through Extended Edition's Database Manager.

Query Manager helps less experienced data base users develop data entry/retrieval applications.

SQL Query Management Facility (SQLQMF) imports data from the IBM DB2 and SQL/DS host relational data bases with QMF installed.

Data conversion utilities exchange/import data with other applications, such as Lotus® spreadsheets and IBM DisplayWrite® 4/2.

Programming enhancements provided in the Operating System/2 Tools and Information Version 1.2 assist developers in creating applications with interactive, menu-based features like pull-downs, action bars, scroll bars and pop-up windows.

High-Performance File System speeds access to fixed disk partitions as large as 2 gigabytes—and handles files of that size as well.

Enhanced System Editor uses the Presentation Manager interface to provide window-based editing capabilities.

Consistent integrated presentation programming interface gives you a high degree of device support—and device independence—along with windowing functions, graphics and fonts. The interface also provides PostScript® support for publishing applications.

Reliability, Availability and Serviceability (RAS) capabilities provide detailed information for fast recovery from system errors in Communications Manager.

Ease-of-use functions for end users and programmers include a mouse-driven graphical interface and the Operating System/2 Programmer's Toolkit.

Consistent application management allows users to run many applications concurrently and view them all on the screen.

80286/80386 architecture support helps you create and run sophisticated applications that take advantage of IBM hardware built with 80286 and 80386 microprocessors.

16Mb real memory addressability lets you develop and run very large applications that include bit-mapped graphics, online documentation, large data requirements, and high-level functions. Additional virtual memory is available on demand in the event that multiple operations exceed installed real memory.

Memory management and multitasking capabilities allow you to perform many operations simultaneously so you can use your time efficiently.

DOS application mode makes it possible to continue using many DOS-based programs you already own.

Common Programming Interface for Communications (CPI/C) creates a single programming interface for APPC applications (planned enhancement).

What you get

IBM Operating System/2 Extended Edition 1.2 comes on 3.5-inch or 5.25-inch diskettes with associated publications.

Programming languages

Whether you want to design a spreadsheet with sophisticated graphics or build a model, there's an IBM programming language suited to the task—and supported by OS/2. The range of languages you can work with includes:

- IBM C/2 Version 1.10—the full-function language with new enhancements for the OS/2 Presentation Manager environment
- IBM COBOL/2—for business applications with access to OS/2 functions and support for multiple memory models
- IBM FORTRAN/2 Version 1.02—for scientific and engineering applications in a multitasking environment
- IBM Macro Assembler/2—for improved application performance and concurrent operation of applications
- IBM Pascal Compiler/2—structured programming facilities and extensive data structures to help you create and execute Pascal programs in the OS/2 environment
- IBM BASIC Compiler/2—for writing, testing and running BASIC programs under OS/2

OS/2 Extended Edition includes LAN Requester Support, which is designed to work with the OS/2 LAN Server program.

IBM COBOL/2, C/2 1.10, FORTRAN/2 1.02, and Macro Assembler/2 can now be used to build easy-to-use graphic applications that run in the Presentation Manager environment.

Options

The IBM Operating System/2 Programming Tools and Information Version 1.2 is available to help boost your productivity in developing applications for the OS/2 environment. Highlights include:

- Graphics and windowing tools such as a font editor, an icon editor, a dialog editor, and a resource compiler
- A programmer's guide
- Facilities for creating dynamic link libraries and family applications
- Programming aids for IBM Macro Assembler/2, C/2 1.10, COBOL/2 and FORTRAN/2 1.02
- Message preparation utilities
- Sample programs illustrating useful programming techniques
- Dialog Manager, including programming aids and a Dialog Tag Language compiler

Also available are IBM Operating System/2 Technical Reference Guides.

Warranty/Service

IBM Operating System/2 Extended Edition 1.2 is developed to meet IBM's high standards of quality and reliability.

OS/2 Extended Edition 1.2 is backed by a warranty and service plan. The three-month warranty starts when the product is acquired and covers both the media and the program. The no-charge service plan is available for up to 12 months after general availability.

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IBM Operating System/2 Extended Edition 1.2 features

Feature	Function	Benefit
LAN Requester	Provides access to resources provided by IBM OS/2 LAN Server	Transparent access to LAN resources, including disk space, printers, processing capabilities and serially attached devices
Communications Manager	Puts comprehensive communications capability in a single computer	Flexibility to receive and send data through multiple concurrent communications over a wide range of connections
Database Manager	Offers facilities for developing and working with a relational data base; also provides a common environment across host systems and personal computers	Greater convenience in designing, creating and accessing a data base; application portability across systems
Presentation Manager windowing	Provides ease of use through Common User Access, a consistent windowing interface; multiple concurrent applications through on-screen windows; comprehensive help information and system messages	Improved productivity; greater transfer of skills; quicker learning for novices; simplified operations for beginners and experienced users; easy switching between applications
High-level programming interface	Provides application developers with a consistent interface across all versions of OS/2. The Presentation Manager programming interface implements elements of SAA and includes rich functions for windowing, graphics, fonts, clipboard and device-independent I/O support	Consistent platform for application development across versions of OS/2; foundation for applications on other IBM operating systems and hardware through Common User Access; capability for programmers to more easily extend programs by concentrating on specific functions
Enhanced ease-of-use facilities	Offer comprehensive help information, descriptive system messages, and menu access to facilities such as installation aid, print spooler, enhanced window-based system editor, and file system application	Quicker learning for computer novices; simplified operations for beginners and experienced users alike
Typographical text	Supports proportional spacing and fonts, multiple fonts, anti-aliased fonts and font creation	Easy-to-read text; higher user productivity
File Manager	Provides file access with mouse or keyboard through graphical interface	Elimination of complex commands; speeds file access and manipulation
Graphic support	Allows Presentation Manager-based applications to create and alter bit-mapped or vector graphics on-screen	Easily available graphics for all applications
Clipboard	Enables cut-and-paste between Presentation Manager-based programs	Capability to move text and graphics among such applications as spreadsheets, word processors and data bases
Dynamic data exchange	Dynamically moves data between multiple concurrent applications	Immediate on-screen updating of information among separate active applications
16Mb addressable random access memory support	Enables developers/users to take full advantage of memory beyond 640Kb for applications and data	Capability to use functionally rich applications, such as spreadsheets and advanced word processing programs, that can process large amounts of data
Concurrent processing of multiple applications	Allows multitasking and fast, easy switching among OS/2 applications and/or DOS applications	Increased productivity and user convenience
DOS compatibility	Allows many existing DOS applications to run unchanged; provides compatible file and command systems	Protection for investment in DOS applications; smooth transition from DOS to OS/2; interchangeable DOS and OS/2 files
Warranty and service	Provide 3-month warranty coverage and a 12-month service plan	Protection for investment in OS/2; increased reliability, availability and serviceability
Dialog Manager	Provides a high-level interface to OS/2 Presentation Manager in the OS/2 Tools and Information Version 1.2	Helps programmers develop applications with easy-to-use, menu-based features
High-Performance File System	Efficient management of large disk media, supports files and disk partitions up to 2 gigabytes	Improved hard file performance; compatible with existing files

Operating System/2 Extended Edition connectivity summary

Supported system	Interface or emulation	Protocol	File transfer	Link[2]
IBM System/370 architecture	APPC	LU6.2		SDLC (3720, 3725, 3705, 3726, 3745 and 9370 Integrated Controller)
				Token-Ring (3270, 37X5, 3726, 3745 and 9370 Integrated Controller, 8232 LAN Channel Station)[3]
				Token-Ring using 3174's 3270 Gateway Feature (#3025) for PU2.0[3]
				Token-Ring, PC Network or Ethernet LAN using OS/2 SNA LAN Gateway
				X.25 using the IBM X.25 Interface Co-Processor/2 Adapters
	3270	LU2	3270-PC File Transfer Program	DFT via 3174/3274 (to SDLC, BSC or channel and 9370 Workstation Program Controller)
	3270 Print	LU1,3		SDLC (3720, 3725, 3705, 3726, 3745 and 9370 Integrated Controller)
	SRPI	LU2		Token-Ring (3270, 37X5, 3726, 3745 and 9370 Integrated Controller)[3]
				Token-Ring using 3174's 3270 Gateway Feature (#3025) for PU2.0[3]
				Token-Ring, PC Network or Ethernet LAN using OS/2 SNA LAN Gateway
				X.25 using the IBM X.25 Interface Co-Processor/2 Adapters
	3101, VT100		3270-PC File Transfer Program	Async[4]
IBM Personal System/2 and IBM PC	APPC	LU6.2		SDLC, Token-Ring[3], PC Network, Ethernet LAN
				X.25 using the IBM X.25 Interface Co-Processor/2 Adapters
	ACDI		XMODEM, ASCII	Async
IBM AS/400	APPC	LU6.2		SDLC, Token-Ring, Twinaxial 5394 Remote Control Unit
	5250 WSF	LU6.2	AS/400 PC Support	
				X.25 using the IBM X.25 Interface Co-Processor/2 Adapters
IBM System/36	APPC	LU6.2		SDLC, Token-Ring
	5250 WSF	LU6.2	PC Support/36	
				X.25 using the IBM X.25 Interface Co-Processor/2 Adapters
IBM System/38 and IBM System/88	APPC	LU6.2		SDLC
IBM Series/1	APPC	LU6.2		SDLC, Token-Ring
	3101			Async
IBM RT®	APPC	LU6.2		SDLC
	VT100		XMODEM	Async
Other hosts[5]	VT100		XMODEM, ASCII	SDLC
	3101[6]		XMODEM, ASCII	Async

[1] *When used with GDDM-OS/2-Link in S/370 environments*
[2] *The OS/2 Extended Edition Communications Manager supports combinations of these links subject to the limitations imposed by installed adapters, memory size and processor capacity. All supported SNA links are sharable by applications which may use up to ten 3270 display sessions (via SDLC or Token-Ring link with up to five, and DFT link with up to five) per workstation. Multiple concurrent SNA LU6.2 sessions per logical unit are supported over remote SDLC or local Token-Ring LAN links. Asynchronous links are serially usable.*
[3] *Both 4Mbits-per-second and 16Mbits-per-second IBM Token-Ring Networks are supported.*
[4] *Asynchronous users requiring SNA support must use a protocol converter on the link.*
[5] *Appropriately programmed.*
[6] *Character mode.*

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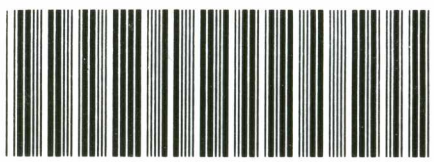

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